



Euro-Par 2010

30th August - 3rd September
Ischia - Naples, ITALY



Euro-Par 2010

16th European Conference on
Parallel and Distributed Computing

Program

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Welcome to Euro-Par 2010

Dear Friends and Colleagues,

Welcome to Ischia for the 16th European Conference on Parallel and Distributed Computing (Euro-Par 2010) and the co-located Workshops.

In this booklet you shall find the Conference Program, all the Workshops Programs and general information on the logistics of the Conference and the social events.

We wish you a productive Conference and a pleasant stay on Ischia Island.

Ischia, August 2010



Euro-Par 2010 co-chairs
Domenico Talia
Pasqua D'Ambra
Mario Rosario Guarracino

General Information

Registration

The Registration Desk shall be open from 08:30 Monday 30th August onwards.

Lecture Rooms

The paper presentations will take place at the Congress Center of the Hotel Continental Terme, Ischia. There will be signs indicating the location of the lecture rooms. Please ask for assistance and directions at the Registration Desk.

The contributed talks will last 30 minutes including questions. Chairs are required to keep the session on schedule. Papers should be presented in the order in which they are listed in the program for the convenience of attendees who may wish to switch rooms mid-session to hear particular papers. In the case of a no-show, please use the extra time for a break or a discussion so that the remaining papers stay on schedule.

Presentation Instructions

The lecture rooms will be equipped with a PC and a video projector. The session chairs should obtain copies of the talks on USB sticks before the session starts. Presenters must deliver the files with the presentation in PDF format on a USB memory stick to the session chair before each session begins in each room.

Internet

Wireless Internet connection is freely available at the Congress Center.

Lunches and Coffee Breaks

Lunches will be served in the Restaurant of the Hotel Continental Terme. Please bring your lunch ticket with you. In case you shall need lunch tickets for an accompanying person, you shall be able to purchase them at the Registration Desk.

Coffee Breaks will be served at the Olympic Bar terrace of the Hotel Continental Terme.

Social Events

The Conference includes two social events:

- A Welcome Reception on Tuesday 31st August, at 20:30 at the Olympic Bar of the Hotel Continental Terme.
- A Conference Dinner on Thursday 2nd September, at 21:00 at the “Ristorante del Parco” of the Hotel Continental Terme.

Please bring your ticket with you. In case you shall need tickets for an accompanying person, you shall be able to purchase them at the Registration Desk.

Workshops Schedule

Monday, August 30th

09:30-11:00	HPCF	HETEROPAR		XtreemOS	HIBB	PROPER
11:00-11:30	Coffee Break					
11:30-13:00	HPCF	HETEROPAR		XtreemOS	HIBB	PROPER
13:00-14:30	Lunch					
14:30-16:00	HPCF	UCHPC	HETEROPAR	XtreemOS	CCPI	PROPER
16:00-16:30	Coffee Break					
16:30-18:00	HPCF	UCHPC	HETEROPAR	XtreemOS	CCPI	PROPER

Tuesday, August 31st

09:30-11:00	VHPC	HPPC	CoreGrid	GECON
11:00-11:30	Coffee Break			
11:30-13:00	VHPC	HPPC	CoreGrid	GECON
13:00 -15:30	Lunch			
15:30-17:00	VHPC	HPPC	CoreGrid	GECON
17:00-17:30	Coffee Break			
17:30-19:00	VHPC	HPPC	CoreGrid	GECON
20:30	Welcome Reception			

Conference Schedule

Wednesday, September 1st				
09:30-11:00	Conference Opening & Keynote 1			
11:00-11:30	Coffee Break			
11:30-13:00	Session A1	Session A2	Session A3	Session A4
13:00 -14:30	Lunch			
14:30-16:00	Session B1	Session B2	Session B3	Session B4
16:00-16:30	Coffee Break			
16:30-18:00	Session C1	Session C2	Session C3	Session C4

Thursday, September 2nd				
09:30-11:00	Keynote 2 and Achievement Award Ceremony			
11:00-11:30	Coffee Break			
11:30-13:00	Session D1	Session D2	Session D3	Session D4
13:00 -14:30	Lunch			
14:30-16:00	Session E1	Session E2	Session E3	Session E4
16:00-16:30	Coffee Break			
16:30-18:00	Distinguished Papers Session			
18:30-20:00	Industrial Session			
21:00	Social Dinner			

Friday, September 3rd				
09:30-11:00	Session F1	Session F2	Session F3	Session F4
11:00-11:30	Coffee Break			
11:30-13:30	Session G1	Session G2	Session G3	Session G4
13:30-14:30	Lunch			
14:30-15:45	Keynote 3 & Conference Closing			

Workshops

1. **The Third Workshop on Productivity and Performance Tools for HPC Application Development (PROPER 2010)**
2. **XtreemOS Summit 2010 (XtreemOS 2010)**
3. **The First Workshop on High-Performance Bioinformatics and Biomedicine (HiBB)**
4. **Workshop on High-Performance Computing applied to Finance (HPCF 2010)**
5. **Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (HeteroPar 2010)**
6. **The Third Workshop on UnConventional High-Performance Computing (UCHPC 2010)**
7. **Workshop on Cloud Computing: Projects and Initiatives (CCPI 2010)**
8. **CoreGrid/ERCIM Workshop (CoreGrid 2010)**
9. **The 7th International Workshop on the Economics of Grids, Clouds, Systems, and Services (GECON 2010)**
10. **The 4th Workshop on Highly Parallel Processing on a Chip (HPPC 2010)**
11. **The 5th Workshop on Virtualization in High-Performance Cluster and Grid Computing (VHPC 2010)**

Euro-Par 2010 Workshop Program
Monday, August 30th

PROPER 2010
Room: Pithecusa

- 09:30 - 09:35 Workshop Opening
A. Knüpfer
- 09:35 - 10:30 Preparing and Evaluating a Petascale Computer: Analytical Performance Modeling and Application Simulation on Blue Waters
Invited talk: T. Höfler
- 10:30 - 11:00 TAUmon: Scalable Online Performance Data Analysis in TAU
A. Morris, C. W. Lee and A. D. Malony
- 11:00 - 11:30 COFFEE BREAK
- 11:30 - 12:00 The VampirTrace Plugin Counter. Interface: Introduction and Examples
R. Schöne, R. Tschüter, T. Ilsche and D. Hackenberg
- 12:00 - 12:30 Scalable/Guided Performance. Analysis Combining Profile and Trace Tools
J. Gimenez, H. Wen, B. Mohr, J. Labarta, D. Klepacki and F. Voigtländer
- 12:30 - 13:00 An approach to visualize remote socket traffic on the Intel Nehalem-EX
C. Iwainsky, T. Reichstein, C. Dahnken, D. an Mey, C. Terboven, A. Semin and C. Bischof
- 13:00 - 14:30 LUNCH
- 14:30 - 15:00 Automatic MPI to AMPI. Program Transformation using Photran
S. Negara, G. Zheng, K. Pan, N. Negara, R. Johnson, L. Kale and P. Ricker
- 15:00 - 15:30 High-Performance Parallel Computations using Python as High-Level Language
S. Masini and P. Bientinesi
- 15:30 Closing Remarks

XtreemOS 2010
Room: Nitrodi A

09:30 – 09:35 Summit Opening
C. Morin (INRIA), J. Giralt (BSC)

Tutorial

09:35 - 11:00 Easing Application Execution in Grids with XtreemOS Operating System (part 1/2)
C. Morin (INRIA), J. Giralt (BSC)

11:00 - 11:30 COFFEE BREAK

11:30 - 13:00 Easing Application Execution in Grids with XtreemOS Operating System (part 2/2)
Y. Jégou (INRIA), T. Kielmann (VUA)

13:00 - 14:30 LUNCH

14:30 - 15:40 XtreemOS demos (demonstration of XtreemOS functionalities, demonstration of real applications (scientific applications))
Y. Jégou (INRIA), B. MacLarnon (SAP)

15:40 - 16:00 Open testbed presentation
Y. Jégou (INRIA)

16:00 - 16:30 COFFEE BREAK

16:30 - 17:15 Presentations of experimental results: computing challenge using XtreemOS
Presenters: C. Morin (INRIA), T. Kielmann (VUA)
Participants: A. Parra, Exequiel Sepulveda & Felipe Lema (ALGES lab, Universidad de Chile) – S. R. Hasan (Université de Franche-Comté, France) – E. Carlini, Sebnem Erturk & Giacomo Righetti (University of Pisa, Italy)

17:15 - 17:45 Open discussions

17:45 Closing Remarks

HIBB
Room: Nitrodi E

High Performance Bioinformatics

- 09:30 - 09:50 StochKit-FF: Efficient Systems Biology on Multicore Architectures
M. Aldinucci, A. Bracciali, P. Lio', A. Sorathiya, M. Torquati
- 09:50 - 10:10 ProtTest-HPC: Fast Selection of Best- t Models of Protein Evolution
D. Darriba, G.L. Taboada, R. Doallo, D. Posada
- 10:10 - 10:30 Gridifying the TINKER Conformer Generator application for gLite Grid
A. Kertesz, F. Otvos and P. Kacsuk
- 10:30 - 10:50 On the Scalability of Multi-Criteria Protein Structure Comparison in the Grid
G. Folino, A.A. Shah, and N. Krasnogor
- 10:50 - 11:30 COFFEE BREAK

High Performance Biomedicine

- 11:30 - 11:50 Real-time electron tomography based on GPU computing
J.A. Martinez, F. Vlazquez, E.M. Garzon, and J.J. Fernandez
- 11:50 - 12:10 Hybrid Parallel Simulations of Fluid Flows in Complex Geometries: Application to the Human Lungs
M.J. Krause, T. Gengenbach, V. Heuveline
- 12:10 - 12:30 Parallel implementation of a computational model of the human immune system
A.B. Pigozzo, M. Lobosco, and R.W. dos Santos
- 12:30 - 12:50 Parallel pre-processing of Affymetrix microarray data using APT
P.H. Guzzi, and M. Cannataro
- 12:50-13:00 Closing Remarks
- 13:00 LUNCH

HPCF 2010
Room: Nitrodi C

- 09:30 - 09:40 Workshop opening
Chair: F. Perla
- 09:40 - 10:30 Applications of distributed and parallel computing in the Solvency II framework
Invited speakers: G. Castellani, L. Passalacqua - Sapienza University of Rome
Paper Session 1
Chair: L. Passalacqua
- 10:30 - 11:00 A fast and stable Heston model calibration on the GPU
M. Aichinger, A. Binder, J. Fürst, and C. Kletzmayer
- 11:00 - 11:30 COFFEE BREAK
- 11:30 - 12:00 High performance computing and economic scenario generation: integrating expert forecasts into plane price modeling as an example
E.M. Fayssal, H. Houssam, W. Sebastian
- 12:00 - 12:30 Use of HPC-techniques for large-scale data migration
J. Dünnweber, V. Mihaylov, R. Glettler, V. Maiborn, H. Wolff
- 12:30 - 13:00 Wavelet techniques for option pricing on advanced architectures
S. Corsaro, D. Marazzina, Z. Marino
- 13:00 - 14:30 LUNCH
- 14:30 - 15:30 Massively parallel asset and liability management
Invited speaker: A. Grothey – School of Mathematics, University of Edinburgh, UK
Paper Session 2
Chair: M. Guarracino
- 15:30 - 16:00 A stock market decision support system with an hybrid evolutionary algorithm for many-core graphics processors
P. Lipinski
- 16:00 - 16:30 COFFEE BREAK
- 16:30 - 17:00 Numerical methods for the Lévy Libor model
A. Papapantoleon, D. Skovmand
- 17:00 - 17:30 Measuring default risk in a parallel ALM software for life insurance portfolios
S. Corsaro, L. Cuttillo, Z. Marino, F. Perla, P. Zanetti
- 17:30 - 17:40 Closing Remarks

HeteroPar 2010
Room: Primavera

- 10:00 - 11:00 Skeletons for distributed heterogeneous architectures
M. Danelutto
- 11:00 - 11:30 COFFEE BREAK
- 11:30 - 12:00 General approaches, from compilation to execution middleware
Accurate emulation of CPU performance
T. Buchert, L. Nussbaum, and J. Gustedt
- 12:00 - 12:30 Case Studies in Automatic GPGPU code generation with llc
R. Reyes and F. de Sande
- 12:30 - 13:00 On the Evaluation of JavaSymphony for Homogeneous and
Heterogeneous Multi-core Clusters
M. Aleem, R. Prodan, and T. Fahringer
- 13:00 - 14:30 LUNCH
- 14:30 - 15:00 Iterative Algorithms
MAHEVE: An Efficient Reliable Mapping of Asynchronous
Iterative Applications on Volatile and Heterogeneous
Environments.
R. Couturier, Da. Laiymani, and S. Miquée
- 15:00 - 15:30 Dynamic Load Balancing of Parallel Computational Iterative
Routines on Platforms with Memory Heterogeneity
D. Clarke, A. Lastovetsky and V. Rychkov
- 15:30 - 16:00 Case studies
Dealing with Heterogeneity for Mapping MMOFPS in
Distributed Systems
I. Barri, J. Rius, C. Roig and F. Giné
- 16:00 - 16:30 COFFEE BREAK
- 16:30 - 17:00 Case studies (continued)
Max-Plus Algebra and Discrete Event Simulation on Parallel
Hierarchal Heterogeneous Platforms
B. Becker and A. Lastovetsky
- 17:00 Closing Remarks

**UCHPC 2010
Room: Nitrodi E**

Accelerator Usage for Applications

- 14:30 - 14:40 Welcome from the organizers
A. Hast, J. Weidendorfer
- 14:40 - 15:00 Iterative solution of linear systems in electromagnetics (and not only): Experiences with CUDA
D. De Donno, A. Esposito, G. Monti, L. Tarricone
- 15:00 - 15:20 Distributed Computation of Feature-Detectors for Medical Image Processing on GPGPU and Cell Processors
P. Zinterhof
- 15:20 - 15:40 Preliminary Investigation of Optimizing Molecular Dynamics Simulation on Godson-T Many-core Processor
L. Peng, G. Tan, R. K. Kalia, A. Nakano, P. Vashishta, D. Fan, N. Sun
- 15:40 - 16:00 Real-time Stopped Object Detection by Neural Dual Background Modeling
G. Gemignani, L. Maddalena, A. Petrosino
- 16:00 - 16:30 COFFEE BREAK

Accelerator Usage Infrastructure

- 16:30 - 16:50 GPU-to-CPU Callbacks
J. A. Stuart, M. Cox, J. D. Owens
- 16:50 - 17:10 Static GPU workgroups and an improved scan Algorithm
J. Breitbart

Speeding up Algorithms with Accelerators

- 17:10 - 17:30 Streaming-Oriented Parallelization of Domain-Independent Irregular Kernels
J. L. Blanco
- 17:30 - 17:50 Scalable Multi-Coloring Preconditioning for Multi-core CPUs and GPUs
V. Heuveline, D. Lukarski, J. Weiss
- 17:50 - 18:10 Peak Performance Model for a Custom Precision Floating-Point Dot Product on FPGAs
B. Lesser, M. Mücke, W. N. Gansterer
- 18:10 Closing Remarks

CCPI 2010
Room: Tifeo

- 14:30 - 15:00 **The Cloud@Home Project: Towards a New Enhanced Computing Paradigm**
A. Puliafito, S. Distefano, A. Vecchio, M. Avvenuti, G. Di Modica, O. Tomarchio, U. Villano, A. Cuomo, S. Venticinque, M. Rak, R. Aversa and B. Di Martino
- 15:00 - 15:30 **Cloud based mediation and access of health care data in the @neurIST project**
M. Koehler, S. Benkner, G. Engelbrecht, and S. Wood
- 15:30 - 16:00 **Building a Mosaic of Clouds**
D. Petcu, B. di Martino, R. Cossu, P. Goncalves, T. Mahr and M. Loichate
- 16:00 - 16:30 **COFFEE BREAK**
- 16:30 - 16:50 **Cloud@Home: Performance Management Components**
U. Villano, R. Aversa, B. Di Martino, M. Rak, S. Venticinque , A. Cuomo , A. Puliafito, D. Bruneo, S. Di Stefano
- 16:50 - 17:10 **A Cloud Agency for SLA Negotiation and Management**
S. Venticinque, R. Aversa, B. Di Martino, D. Petcu, M. Rak
- 17:10 - 17:30 **Running business applications in the Cloud: a use case perspective**
C. Ragusa, A. Puliafito
- 17: 30 - 17:50 **Minimizing technical complexities in emerging cloud computing platforms**
A. Menychtas, G. Kousiouris, D. Kyriazis, T. Varvarigou
- 18:00 **Closing Remarks**

Tuesday, August 31st

**CoreGrid 2010
Room: Pithecusa**

- 09:30 - 09:40 Introduction
F. Desprez
- 09:40 - 10:10 EGI: The European Grid Infrastructure - Future Challenges
S. Newhouse
- 10:10 - 10:35 A framework for autonomic management of multiple non-functional concerns
M. Aldinucci, M. Danelutto, P. Kilpatrick, V. Xhagjika
- 10:35 - 11:00 Adaptive instantiation of service workflows using a chemical approach
C. Di Napoli, M. Giordano, Z. Németh, N. Tonellotto
- 11:00 - 11:30 COFFEE BREAK
- 11:30 - 12:00 Position paper: *R. Yahyapour*
- 12:00 - 12:30 Position Paper: *V. Getov*
- 12:30 - 13:00 Discussion: Future Direction of Coregrid
- 13:00 - 15:30 LUNCH
- 15:30 - 15:55 Multi-level Brokering Solution for Interoperating Service and Desktop Grids
A. Kertesz, Z. Farkas and P. Kacsuk
- 15:55 - 16:20 Software Licenses as Mobile Objects in Distributed Computing Environments
C. Cacciari, D. Mallmann, C. Zsigri, F. D'Andria, B. Hagemeyer, D. Garcla Per'ez, A. Ruml, W. Ziegler, M. Gozalo, and J. Martrat
- 16:20 - 17:30 Actor-driven Workflow Execution in Distributed Environments.
S. Skorupa, F. Berretz, V. Sander, A. Belloum and M. Bubak
- 17:00 - 17:30 COFFEE BREAK
- 17:30 - 17:55 First Class Futures: Specification and implementation of Update Strategies
L. Henrio, M. Uzair Khan, N. Rinaldo, and E. Zimeo

- 17:55 - 18:20 GroudSim: An Event-based Simulation Framework for
Computational Grids and Clouds
S. Ostermann, K. Plankensteiner, R. Prodan, and T. Fahringer
- 18:20-18:45 Dynamic Service Configurations for SLA Negotiation
I. ul Haq, K. Koer, E. Schikuta
- 18:45 Closing Remarks



GECON 2010
Room: Primavera

09:15 - 09:30 Welcome

Session A: Service Evaluation and Trust

09:30 - 10:00 Technology Transfer of Dynamic IT Outsourcing Requires
Security Measures in SLAs
F. Dickmann, M. Brodhun, J. Falkner, T. A. Knoch, U. Sax

10:00 - 10:30 Service Selection Decision Support in the Internet of Services
K. Tserpes, F. Aisopos, D. Kyriazis, T. Varvarigou

10:30 - 11:00 Resource-Level QoS Metric for CPU-Based Guarantees in Cloud
Providers
Í. Goiri, F. Julià, J.O. Fitó, M. Macías, J. Guita

11:00 - 11:30 COFFEE BREAK

Session B: Service Pricing and Software Licenses

11:30 - 12:00 A Framework for Building Intelligent SLA Negotiation Strategies
under Time Constraints
G.C. Silaghi, L.D. Serban, and C.M. Litan

12:00 - 12:30 Agent-Based Simulations of the Software Market under Different
Pricing Schemes for Software-as-a-Service and Perpetual
Software
J. Rohitratana, J. Altmann

12:30 - 13:00 SLA-Based Management of Software Licenses as Web Service
Resources in Distributed Environments
*C. Cacciari, D. Mallmann, C. Zsigri, F. D'Andria, B. Hagemeyer, A.
Rumpl, W. Ziegler, J. Martrat*

13:00 - 14:30 LUNCH

14:30 - 15:30 Round Table Discussion
Discussion of trends Challenges in the area of economics of
Clouds Invitation to Future Generation of Computer Systems
Journal, Springer

Session C: Work in Progress on Adoption of Grid and Cloud Services

15:30 - 16:00 IaaS Adoption Determinants in Enterprises
C. Heinle, J. Strebel

- 16:00 - 16:30 ETSI CLOUD - Initial Standardization Requirements for Cloud Services
K. Oberle, M. Fisher
- 16:30 - 17:00 Approaching the Internalization Challenge of Grid Technologies into e-Society by e-Human "Grid" Ecology
T.A. Knoch, V. Baumgärtner, F.G. Grosveld, K. Egger
- 17:00 - 17:30 COFFEE BREAK

Session D: Work in Progress on Value Chains and Service Level Agreements

- 17:30 - 18:00 Towards a Generic Value Network for Cloud Computing
M. Böhm, G. Koleva, S. Leimeister, C. Riedl, H. Krcmar
- 18:00 - 18:30 SLA as a Complementary Currency in Peer-2-Peer Markets
I. Petri, O. Rana, G.C. Silaghi
- 18:30 - 19:00 SLA Validation in Layered Cloud Infrastructures
I. Ul Haq, I. Brandic, É. Schikuta
- 19:00 Closing Remarks

HPPC 2010
Room: Nitrodi A

Models and memory organizations

- 09:30 - 09:35 Opening remarks
J.L. Träff and M. Forsell, University of Vienna, VTT
- 09:35 - 10:35 Keynote - The Massively Parallel Computing Model GCA -
R. Hoffmann, T. University of Darmstadt
- 10:35 - 11:00 Low-Overhead Organizations for the Directory in Future Many-
Core CMPs
*A. Ros and M.E. Acacio, Technical University of Valencia, University
of Murcia*
- 11:00 - 11:30 COFFEE BREAK

Programming multicores

- 11:30 - 11:55 A Work Stealing Algorithm for Parallel Loops on Shared Cache
Multicores
*M. Tchiboukdjian, V. Danjean, T. Gautier, F. Le Mentec and B. Raffin,
CNRS - CEA/DAM, DIF, Grenoble University, INRIA*
- 11:55 - 12:20 Resource-agnostic programming for many-core microgrids
*T. Bernard, C. Grelck, M. Hicks, C. Jesshope and R. Poss, University of
Amsterdam*
- 12:20 - 12:45 Programming Heterogeneous Multicore Systems using
Threading Building Blocks
*G. Russell, P. Keir, A. Donaldson, U. Dolinsky, A. Richards and C.
Riley, Codeplay Software, University of Glasgow, Oxford University*
- 13:00 - 15:30 LUNCH

Applications and optimizations

- 15:30 - 15:55 Fine-grained parallelization of a Vlasov-Poisson application on GPU
G. Latu, CEA, IFRM
- 15:55 - 16:20 Highly Parallel Implementation of Harris Corner Detector on
CSX SIMD Architecture
F. Hosseini, A. Fijany and J. Fontaine, Italian Institute of Technology
- 16:20 - 16:45 Static Speculation as Post-Link Optimization for the Grid Alu
Processor
R. Jahr, B. Shehan, S. Uhrig and T. Ungerer, University of Augsburg
- 17:00 - 17:30 COFFEE BREAK

Networks and clouds

- 17:30 - 17:55 **A Multi-Level Routing Scheme and Router Architecture to support Hierarchical Routing in Large Network on Chip Platforms**
R. Holsmark, S. Kumar and M. Palesi, Jönköping University, University of Catania
- 17:55 - 18:55 **Keynote - Intel Lab's "Single-chip Cloud Computer", an IA Tera-scale Research Processor**
J. Held, Tera-Scale Computing Research, Intel
- 18:55 - 19:00 **Closing Remarks**
J. Larsson T. and M. Forsell, University of Vienna, VTT



VHPC 2010
Room: Nitrodi C

- 09:30 - 10:00 **The Effect of Multi-core on HPC Applications in Virtualized Systems.**
J. Han, J. Ahn, C. Kim, Y. Kwon, Y. Choi and J. Huh (Korea Advanced Institute of Science and Technology, Korea)
- 10:00 - 10:30 **Proposal of Virtual Network Configuration Acquisition Function for Data Center Operations and Management System**
H. Okita (Hitchai Ltd., Japan)
- 10:30 - 11:00 **Building an Operator CDN the virtual way**
H. Puthalath (Ericsson, Sweden)
- 11:00 - 11:30 **COFFEE BREAK**
- 11:30 - 12:00 **Security and Performance Trade-off in PerfCloud**
M. Rak (Second University of Naples, Italy); U. Villano, V. Casola, A. Cuomo (University of Sannio, Italy)
- 12:00 - 12:30 **A Distributed and Collaborative Dynamic Load Balancer for Virtual Machine.**
J. Rouzaud-Cornabas (ENSI de Bourges -Laboratoire d'Informatique Fondamentale d'Orléans, France)
- 12:30 - 13:00 **Towards GPGPU assisted computing in virtualized environments**
T. Schmitt, A. Weggerle, C. Himpel, P. Schulthess (Universität Ulm, Germany)
- 13:00 - 15:30 **LUNCH**
- 15:30 - 16:00 **Providing Performance Guarantees to Virtual Machines using Real-Time Scheduling**
T. Cucinotta, D. Giani, D. Faggioli, F. Checconi (Scuola Superiore Sant'Anna, Italy)
- 16:00 - 16:30 **Exploring I/O Virtualization Data-paths for MPI Applications in a Cluster of VMs: A Networking Perspective**
A. Nanos, G. Goumas; N. Koziris (School of Electrical and Computer Engineering National Technical University of Athens, Greece)
- 16:30 - 17:20 **Guest Speaker: NASA Nebula: A Cloud Computing Platform for Government**
C. Kemp, CIO Ames Research Center and Lead Nebula Cloud Platform (NASA, USA)
- 17:20 - 17:30 **COFFEE BREAK**

- 17:30 - 18:00 **A Survey Analysis of Memory Elasticity Techniques**
A. Baruchi, E. Midorikawa (University of Sao Paulo, Brazil)
- 18:00 - 18:30 **Vistas: towards Behavioural Cloud Control**
A. Wood (University of York, United Kingdom)
- 18:30 - 19:00 **Closing Remarks**



Euro-Par 2010 Topics

1. Support Tools and Environments
2. Performance Prediction and Evaluation
3. Scheduling and Load-Balancing
4. High Performance Architectures and Compilers
5. Parallel and Distributed Data Management
6. Grid, Cluster and Cloud Computing
7. Peer to Peer Computing
8. Distributed Systems and Algorithms
9. Parallel and Distributed Programming
10. Parallel Numerical Algorithms
11. Multicore and Manycore Programming
12. Theory and Algorithms for Parallel Computation
13. High Performance Networks
14. Mobile and Ubiquitous Computing

Euro-Par 2010 Conference Program

Wednesday, September 1st, 09:30, Conference Opening Room: Pithecusa

Wednesday, September 1st, 10:00-11:00

Keynote 1 Chair: D. Talia Room: Pithecusa

Innovation in Cloud Computing Architectures

Prof. Ignacio M. Llorente - Universidad Complutense de Madrid

Wednesday, September 1st, 11:30-13:00, Paper Session A1

Topic 1 Chair: E. Jeannot Room: Nitrodi A

1. Starsscheck: A Tool to Find Errors in Task-Based Parallel Programs
Paul Carpenter, Alex Ramirez and Eduard Ayguade
2. Automated Tuning in Parallel Sorting on Multi-Core Architectures
Haibo Lin, Chao Li, Qian Wang, Yi Zhao, Ninghe Pan, Xiaotong Zhuang and Ling Shao
3. Estimating and Exploiting Potential Parallelism by Source-Level Dependence Profiling
Jonathan Mak, Karl-Filip Faxén, Sverker Janson and Alan Mycroft

Wednesday, September 1st, 11:30-13:00, Paper Session A2

Topic 3 Chair: R. Yahyapour Room: Primavera

1. A Fast 5/2 Approximation Algorithm for Hierarchical Scheduling
Marin Bougeret, Pierre- Françoise Dutot, Klaus Jansen, Christina Otte and Denis Trystram
2. Non-Clairvoyant Scheduling of Multiple Bag-of-Tasks Applications
Henri Casanova, Matthieu Gallet and Frédéric Vivien
3. Extremal Optimization Approach Applied to Initial Mapping of Distributed Java Programs
Ivanoe De Falco, Eryk Laskowski, Richard Olejnik, Umberto Scafuri, Ernesto Tarantino and Marek Tudruj

Wednesday, September 1st, 11:30-13:00, Paper Session A3

Topic 11 Chair: J. Larsson Traff Room: Pithecusa

1. JavaSymphony: A Programming and Execution Environment for Parallel and Distributed Many-Core Architectures
Muhammad Aleem, Radu Prodan and Thomas Fahringer
2. Scalable Producer-Consumer Pools based on Elimination-Diffraction Trees
Yehuda Afek, Guy Korland, Maria Natanzon and Nir Shavit
3. Productivity and Performance: Improving Consumability of Hardware Transactional Memory through a Real-World Case Study
Huayong Wang, Yi Ge, Yanqi Wang and Yao Zou

Wednesday, September 1st, 11:30-13:00, Paper Session A4

Topic 8

Chair: G. Schmid

Room: Nitrodi C

1. Improving Message Logging Protocols Scalability through Distributed Event Logging
Thomas Ropars and Christine Morin
2. Value-Based Sequential Consistency for Set Objects in Dynamic Distributed Systems
Roberto Baldoni, Silvia Bonomi and Michel Raynal
3. Robust Self-Stabilizing Construction of Bounded Size Weight-Based Clusters
Colette Johnen and Fouzi Mekhaldi

Wednesday, September 1st, 14:30-16:00, Paper Session B1

Topic 6

Chair: F. Desprez

Room: Primavera

1. Deployment of a Hierarchical Middleware
Eddy Caron, Benjamin Depardon and Frederic Desprez
2. Toward Real-Time, Many-Task Applications on Large Distributed Systems
Sangho Yi, Derrick Kondo and David Anderson
3. Scheduling Scientific Workflows to Meet Soft Deadlines in the Absence of Failure Models
Kassian Plankensteiner, Radu Prodan and Thomas Fahringer

Wednesday, September 1st, 14:30-16:00, Paper Session B2

Topic 10

Chair: D. di Serafino

Room: Nitrodi A

1. Scalability and Locality of Extrapolation Methods for Distributed-Memory Architectures
Matthias Korch, Thomas Rauber and Carsten Scholtes
2. CFD Parallel Simulation using Getfem++ and Mumps
Michel Fournié, Nicolas Renon, Yves Renard and Daniel Ruiz
3. Aggregation AMG for Distributed Systems Suffering from Large Message Numbers
Maximilian Emans

Wednesday, September 1st, 14:30-16:00, Paper Session B3

Topic 11

Chair: B. Di Martino

Room: Pithecusa

1. Exploiting Fine-Grained Parallelism on Cell Processors
Ralf Hoffmann, Andreas Prell and Thomas Rauber
2. Optimized On-Chip-Pipelined Mergesort on the Cell/B.E.
Rikard Hultén, Christoph W. Kessler and Jörg Keller
3. Near-Optimal Placement of MPI Processes on Hierarchical NUMA Architectures
Emmanuel Jeannot and Guillaume Mercier

Wednesday, September 1st, 14:30-16:00, Paper Session B4

Topic 5 – 7

Chair: R. Sakellariou

Room: Nitrodi C

1. Federated Enactment of Workflow Patterns
Gagarine Yaikhom, Chee Sun Liew, Liangxiu Han, Jano van Hemert, Malcolm Atkinson and Amy Krause
2. A Distributed Approach to Detect Outliers in Very Large Data Sets
Fabrizio Angiulli, Stefano Basta, Stefano Lodi and Claudio Sartori
3. Overlay Management for Fully Distributed User-Based Collaborative Filtering
Róbert Ormándi, István Hegedüs and Mark Jelasity

Wednesday, September 1st, 16:30-18:00, Paper Session C1

Topic 9

Chair: S. Gorlatch

Room: Pithecusa

1. Transactional Mutex Locks
Luke Dalessandro, Dave Dice, Michael Scott, Nir Shavit and Michael Spear
2. Exceptions for Algorithmic Skeletons
Mario Leyton, Ludovic Henrio and José M. Piquer
3. Generators-of-Generators Library with Optimization Capabilities in Fortress
Kento Emoto, Zhenjiang Hu, Kazuhiko Kakehi, Kiminori Matsuzaki and Masato Takeichi

Wednesday, September 1st, 16:30-18:00, Paper Session C2

Topic 2

Chair: M. Cannataro

Room: Primavera

1. A Model for Space-Related Failures in Large-Scale Distributed Systems
Matthieu Gallet, Nezih Yigitbasi, Bahman Javadi, Derrick Kondo, Alexandru Iosup and Dick Epema
2. Architecture Exploration for Efficient Data Transfer and Storage in Data-Parallel Applications
Rosilde Corvino, Abdoulaye Gamatié and Pierre Boulet
3. jitSim: A Simulator for Predicting Scalability of Parallel Applications in Presence of OS Jitter
Vijay Mann and Pradipta De

Wednesday, September 1st, 16:30-18:00, Paper Session C3

Topic 13

Chair: J. Flich

Room: Nitrodi A

1. An Efficient Strategy for Reducing Head-Of-Line Blocking in Fat-Trees
Jesus Escudero-Sahuquillo, Pedro Javier Garcia, Francisco J. Quiles and Jose Duato
2. A First Approach to King Topologies for On-Chip Networks
Esteban Stafford, Jose L. Bosque, Carmen Martínez, Fernando Vallejo, Ramon Beivide and Cristobal Camarero
3. Optimizing Matrix Transpose on Torus Interconnects
Venkatesan T. Chakaravarthy, Nikhil Jain and Yogish Sabharwal

Wednesday, September 1st, 16:30-18:00, Paper Session C4

Topic 7

Chair: P. Trunfio

Room: Nitrodi C

1. **Dynamic Publish/Subscribe to Meet Subscriber-defined Delay and Bandwidth Constraints**
Muhammad Adnan Tariq, Gerald Koch and Boris Koldehofe
2. **Combining Hilbert SFC and Bruijn Graphs for Searching Computing Markets in a P2P System**
Damia Castellà, Hector Blanco, Francesc Giné and Francesc Solsona
3. **Sampling Bias in BitTorrent Measurements**
Boxun Zhang, Alexandru Iosup, Johan Pouwelse, Dick Epema and Henk Sips



Thursday, September 2nd, 09:30-10.30

Keynote 2

Chair: P. D'Ambra

Room: Pithecusa

Impact of Architecture and Technology for Extreme Scale on Software and Algorithm Design

Prof. Jack Dongarra - University of Tennessee, Oak Ridge National Laboratory, University of Manchester

Thursday, September 2nd, 10:30-11:00

Achievement Award Ceremony

Room: Pithecusa

Chairs: C. Lengauer, D. Talia

Thursday, September 2nd, 11:30-13:00, Paper Session D1

Topic 1

Chair: G. Spezzano

Room: Primavera

1. Source-to-Source Optimization of CUDA C for GPU Accelerated Cardiac Cell Modeling
Fred Lionetti, Andrew McCulloch and Scott Baden
2. Efficient Graph Partitioning Algorithms for Collaborative Grid Workflow Developer Environments
Gergely Sipos and Peter Kacsuk
3. Profile-Driven Selective Program Loading
Tugrul Ince and Jeffrey Hollingsworth

Thursday, September 2nd, 11:30-13:00, Paper Session D2

Topic 3

Chair: R. Perego

Room: Pithecusa

1. A Delay-Based Dynamic Load Balancing Method and Its Stability Analysis and Simulation
Qingyang Meng, Jianzhong Qiao and Shukuan Lin
2. Code Scheduling for Optimizing Parallelism and Data Locality
Taylan Yemliha, Mahmut Kandemir, Ozcan Ozturk, Emre Kultursay and Sai Prashanth Muralidhara
3. Hierarchical Work-Stealing
Jean-Noel Quintin and Frédéric Wagner

Thursday, September 2nd, 11:30-13:00, Paper Session D3

Topic 4

Chair: M. Danelutto

Room: Nitrodi A

1. Power-Efficient Spilling Techniques for Chip Multiprocessors
Enric Herrero, Jose Gonzalez and Ramon Canal
2. Scalable Object-Aware Hardware Transactional Memory (SOHTM)
Behram Khan, Mikel Lujan, Ian Watson and Matthew J. Horsnell
3. Efficient Address Mapping of Shared Cache for On-Chip Many-Core Architecture
Fenglong Song, Zhiyong Liu, Dongrui Fan, Junchao Zhang and Lei Yu

Thursday, September 2nd, 11:30-13:00, Paper Session D4

Topic 14

Chair: G. De Pietro

Room: Nitrodi C

1. cTrust: Trust Aggregation in Cyclic Mobile Ad Hoc Networks
Huanyu Zhao, Xin Yang and Xiaolin Li
2. Maximizing Growth Codes Utility in Large-scale Wireless Sensor Networks
Yao Zhao, Xin Wang, Jin Zhao and Xiangyang Xue
3. Caching Dynamic Information in Vehicular Ad-Hoc Networks
Nicholas Loulloudes, George Pallis and Marios D. Dikaiakos

Thursday, September 2nd, 14:30-16:00, Paper Session E1

Topic 8

Chair: G. Schmid

Room: Nitrodi C

1. Adaptive Conflict Unit Size for Distributed Optimistic Synchronization
Kim-Thomas Rehmman, Marc-Florian Mueller and Michael Schoettner
2. Frame Allocation Algorithms for Multi-Threaded Network Cameras
Jose Piquer and Javier Bustos-Jiménez
3. Scalable Distributed Simulation of Large Dense Crowds Using the RTF Middleware
Sergey Gorlatch, Ole Scharf, Felix Blanke, Christoph Hemker, Sebastian Westerheide, Tobias Priebs, Christoph Bartenhagen, Alexander Ploss, Frank Glinka, and Dominik Meilaender

Thursday, September 2nd, 14:30-16:00, Paper Session E2

Topic 11

Chair: B. Di Martino

Room: Pithecusa

1. Parallel Enumeration of Shortest Lattice Vectors
Özgür Dagdelen and Michael Schneider
2. A Parallel GPU Algorithm for Mutual Information based 3D Nonrigid Image Registration
Vaibhav Saxena, Jonathan Rohrer and Leiguang Gong
3. Multi-GPU and Multi-CPU Parallelization for Interactive Physics Simulations
Everton Hermann, Bruno Raffin, Françoise Faure, Thierry Gautier and Jérémie Allard

Thursday, September 2nd, 14:30-16:00, Paper Session E3

Topic 3

Chair: D. Epema

Room: Primavera

1. Optimum Diffusion for Load Balancing in Mesh Networks
George Markomanolis and Nikolaos Missirlis
2. A Dynamic, Distributed, Hierarchical Load Balancing for HLA-based Simulations on Large-Scale Environments
Robson De Grande and Azzedine Boukerche

Thursday, September 2nd, 14:30-16:00, Paper Session E4

Topic 9 – 1

Chair: T. Kielmann

Room: Nitrodi A

1. User Transparent Task Parallel Multimedia Content Analysis
Timo van Kessel, Niels Drost and Frank J. Seinsträ
2. Parallel Simulation for Parameter Estimation of Optical Tissue Properties
Mihai Duta, Jeyarajan Thiyaalingam, Anne Trefethen, Ayush Goyal, Vicente Grau and Nic Smith
3. Characterizing the Impact of Using Spare-Cores on Application Performance
Jose C. Sancho, Darren Kerbyson and Michael Lang

Thursday, September 2nd, 16:30-18:00, Distinguished Papers Session

Chair: R. Perrot

Room: Pithecura

1. Long DNA Sequence Comparison on Multicore Architectures
Friman Sánchez, Felipe Cabarcas, Alex Ramirez and Mateo Valero
2. The x-Wait-freedom Progress Condition
Michel Raynal and Damien Imbs
3. Adaptive Fault Tolerance for Many-Core based Space-Borne Computing
Mark James, Paul Springer and Hans Zima

Thursday, September 2nd, 18:30-20:00, Industrial Session

Chair: P. D'Ambra

Room: Pithecura

1. When Benchmarking Makes the Difference: Simulation of Pump and Probe Experiments, a Practical Case
Piero Altoè, HPC Specialist (EMEA) at E4 Computer Engineering
2. IBM Solutions for HPC Looking at Large Scale Infrastructures
Marco Briscolini, Senior Consultant, IBM Italy
3. HPC Clusters and Solutions
Alberto Galli, HPC Consultant at HP

Friday, September 3rd, 09:30-11:00, Paper Session F1

Topic 6

Chair: P. Trunfio

Room: Primavera

1. A GPGPU Transparent Virtualization Component for High-performance Computing Clouds
Giulio Giunta, Raffaele Montella, Giuseppe Agrillo and Giuseppe Coviello
2. What Is the Price of Simplicity? A Cross-platform Evaluation of the SAGA API
Mathijs den Burger, Ciel Jacobs, Thilo Kielmann, Andre Merzky, Ole Weidner and Hartmut Kaiser
3. User-centric, Heuristic Optimization of Service Composition in Clouds
Kevin Kofler, Irfan Ul Haq and Erich Schikuta

Friday, September 3rd, 09:30-11:00, Paper Session F2

Topic 10

Chair: M. Vajtersic

Room: Nitrodi A

1. A Parallel Implementation of the Jacobi-Davidson Eigensolver and its Application in a Plasma Turbulence Code
Eloy Romero and Jose E. Roman
2. Scheduling Parallel Eigenvalue Computations in a Quantum Chemistry Code
Martin Roderus, Anca Berariu, Hans-Joachim Bungartz, Sven Krüger, Alexei Matveev and Notker Rösch
3. Scalable Parallelization Strategies to Accelerate NuFFT Data Translation on Multicores
Yuanrui Zhang, Jun Liu, Emre Kultursay, Mahmut Kandemir, Nikos Pitsianis and Xiaobai Sun

Friday, September 3rd, 09:30-11:00, Paper Session F3

Topic 11

Chair: D. Trystram

Room: Pithecura

1. Maestro: Data Orchestration and Tuning for OpenCL Devices
Kyle Spafford, Jeremy Meredith and Jeffrey Vetter
2. Multithreaded Geant4: Semi-Automatic Transformation into Scalable Thread-Parallel Software
Xin Dong, Gene Cooperman and John Apostolakis
3. Parallel Exact Time Series Motif Discovery
Ankur Narang and Souvik Bhattacharjee

Friday, September 3rd, 09:30-11:00, Paper Session F4

Topic 7 - 4

Chair: P. Diniz

Room: Nitrodi C

1. A Formal Credit-Based Incentive Model for Sharing Computer Resources
Josep Rius, Ignasi Barri, Fernando Cores and Francesc Solsona
2. Thread Owned Block Cache: Managing Latency in Many-Core Architecture
Fenglong Song, Zhiyong Liu, Dongrui Fan, Lei Yu and Shibin Tang
3. Extending the Cell SPE with Energy Efficient Branch Prediction
Briejer Martijn, Cor Meenderinck and Ben Juurlink

Friday, September 3rd, 11:30-13:30, Paper Session G1

Topic 6 – 2

Chair: J. Cunha

Room: Primavera

1. A Distributed Market Framework for Large-scale Resource Sharing
Marian Mihailescu and Yong-Meng Teo
2. Using Network Information to Perform Meta-scheduling in Advance in Grids
Luis Tomàs, Agustin Caminero, Carmen Carrion and Blanca Caminero
3. pCFS vs. PVFS: Comparing a Highly-Available Symmetrical Parallel Cluster File System with an Asymmetrical Parallel File System
Paulo Lopes and Pedro Medeiros
4. Comparing Scalability Prediction Strategies on an SMP of CMPs
Karan Singh, Matthew Curtis-Maury, Sally McKee, Filip Blagojevic, Dimitrios Nikolopoulos, Bronis de Supinsk and Martin Schulz

Friday, September 3rd, 11:30-13:30, Paper Session G2

Topic 12

Chair: C. Scholtes

Room: Nitrodi A

1. Analysis of Multi-Organization Scheduling Algorithms
Johanne Cohen, Daniel Cordeiro, Denis Trystram and Frédéric Wagner
2. Area-Maximizing Schedules for Series-Parallel DAGs
Gennaro Cordasco and Arnold L. Rosenberg
3. Parallel Selection by Regular Sampling
Alexander Tiskin
4. Ants in Parking Lots
Arnold L. Rosenberg

Friday, September 3rd, 11:30-13:30, Paper Session G3

Topic 11

Chair: E. Cesario

Room: Pithecusa

1. Optimized Dense Matrix Multiplication on a Many-Core Architecture
Elkin Garcia, Ioannis E. Venetis, Rishi Khan and Guang R. Gao
2. A Language-Based Tuning Mechanism for Task and Pipeline Parallelism
Frank Otto, Christoph A. Schaefer, Matthias Dempe and Walter F. Tichy
3. A Study of a Software Cache Implementation of the OpenMP Memory Model for Multicore and Manycore Architectures
Chen Chen, Joseph B. Manzano, Ge Gan, Guang R. Gao and Vivek Sarkar
4. Programming CUDA-based GPUs to Simulate Two-Layer Shallow Water Flows
Marc de la Asunción, Jose M. Mantas and Manuel J. Castro

Friday, September 3rd, 11:30-13:30, Paper Session G4

Topic 14

Chair: G. De Pietro

Room: Nitrodi C

1. On Deploying Tree Structured Agent Applications in Networked Embedded Systems
Nikos Tziritas, Thanasis Loukopoulos, Spyros Lalis and Petros Lampasas

2. **Meaningful Metrics for Evaluating Eventual Consistency**
João Barreto and Paulo Ferreira
3. **@Flood: Auto-Tunable Flooding for Wireless Ad Hoc Networks**
José Mocito, Luís Rodrigues and Hugo Miranda
4. **Collaborative Cellular-based Location System**
David Navalho and Nuno Preguiça

Friday, September 3rd, 14:30-15.30

Keynote 3 Chair : M.R. Guarracino

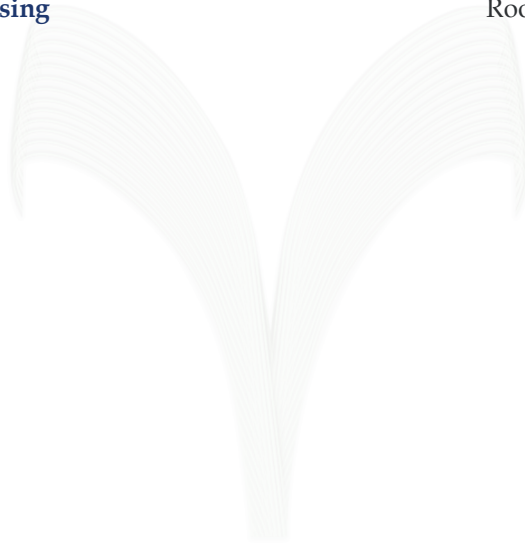
Room: Pithecusa

Computational Epidemiology: a New Paradigm in the Fight against Infectious Diseases

Dr. Vittoria Colizza - ISI Foundation

**Friday, September 3rd, 15:30-15.45,
Conference Closing**

Room: Pithecusa



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